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HOVERCRAFT LEADERSHIP

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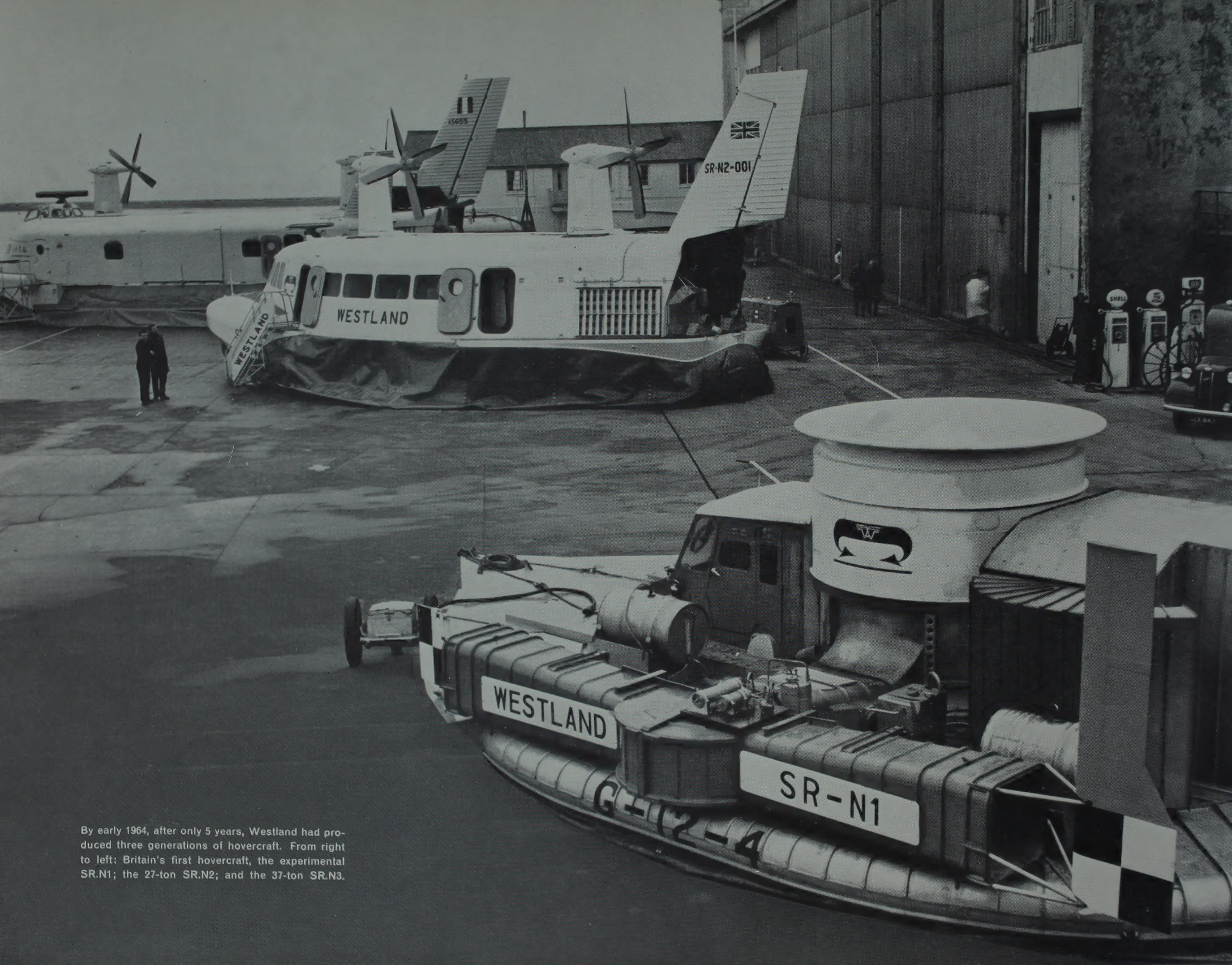

By early 1964, after only 5 years, Westland had produced three generations of hovercraft. From right to left: Britain's first hovercraft, the experimental SR.N1; the 27-ton SR.N2; and the 37-ton SR.N3.

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THE COMPLIMENTS OF

Westland Aircraft Limited

YEOVIL ENGLAND

Centre of an admiring crowd after the first hovercraft crossing of the English Channel on July 25th, 1959.

Carrying 20 armed troops at the 1959 Farnborough Air Show.

First in Britain

Westland's Saunders-Roe Division designed and built Britain's first hovercraft, the experimental SR.N1. Within three months of being launched in May 1959, it made history with the first hovercraft crossing of the English Channel, made to mark the 50th anniversary of the first cross-channel flight by Louis Blériot.

Built originally to prove that the basic hovercraft principle was sound, SR.N1 was subsequently developed so successfully that it played a vital part in much wider investigations. In particular, it was used for the first experiments with the Westland-designed flexible skirt, which revolutionised over-wave and obstacle-clearance capability, and made small hovercraft a real commercial proposition. In addition, it provided much valuable data on high-speed operation generally.

During its progressive development, five distinct versions were evolved, each representing a significant advance over its predecessor. Originally designed to operate at an all-up weight of 4 tons and a speed of 25 knots, SR.N1 was, by the time its test programme ended, operating regularly at almost twice the all-up weight and over twice the speed.

High-speed run on the Thames during a demonstration for Commonwealth Prime Ministers.

At speed in its fully-developed form – with 4 ft. skirts, a re-designed bow and a separate jet engine for propulsion.

An immediate outcome of Westland's success with long skirts – the versatile 7-ton SR.N5. Its over-wave and obstacle-clearance capability make it suitable for operation over a large proportion of the sheltered-water and open-country areas of the world

First with Skirts

Westland was the first hovercraft manufacturer to develop a successful, long flexible skirt. Without this development, the hovercraft would almost certainly have remained just an interesting idea.

Previously, it was not practical to build craft to ride over obstacles more than a few inches high. Overland operation was therefore very restricted. At sea, the hovercraft's inherent speed and smoothness could be exploited only in very calm conditions.

Westland's success with long skirts on SR.N1 completely changed this picture. Whereas before, Britain's first hovercraft could clear only 9 in. obstacles, it could now clear 3 ft. 6 in. At sea, it could now ride smoothly in waves 3/4 ft. high, wave impact being cushioned by the bending of its skirt. These great improvements meant that much wider overwater, overland and amphibious operation of all hovercraft was now feasible. Equally important, small hovercraft were, for the first time, a commercial proposition.

The significance of this breakthrough is shown by the fact that, little more than a year later, Westland had the 7-ton SR.N5 in full production. Its payload capacity (up to 18 passengers or 2 tons of freight) and performance were previously unobtainable with a craft of its size. Its performance is, in fact, comparable to that of a 150/250-ton craft without skirts. In early 1965, it was joined by the larger SR.N6 (up to 38 passengers or 3 tons of freight) on the World's first hovercraft production line.

At the other end of the scale, the 160-ton SR.N4 is now under construction for the first passenger-and-vehicle hovercraft service across the English Channel, which is scheduled to open in 1968. A 6 ft. skirt will enable it to operate all the year round, whisking 250 passengers and 30 cars between Ramsgate and Calais in half an hour or so.

Scrubland virtually impenetrable on foot, poses no problem for the 'skirted' SR.N1.

With a 4 ft. skirt, SR.N2 travels smoothly at speed over offshore saltings in Southern England, with gullies up to 4 ft. deep and 20 ft. wide.

First in Canada

In May 1963, in recognition of exceptional Canadian interest in hovercraft, the 27-ton SR.N2 was shipped to Montreal to give the first-ever hovercraft demonstration in the Dominion. During a two-week programme at the Royal St. Lawrence Yacht Club at Dorval, SR.N2 carried more than 1,250 passengers and covered more than 500 miles.

The guest list included Federal and Provincial Government representatives, high-ranking officers of the Canadian and United States Armed Services, and important representatives of Industry from as far afield as Central and South America and Japan.

A number of Canadian firms showed keen interest in possible hovercraft operations, both on overwater passenger ferry routes and in remote areas.

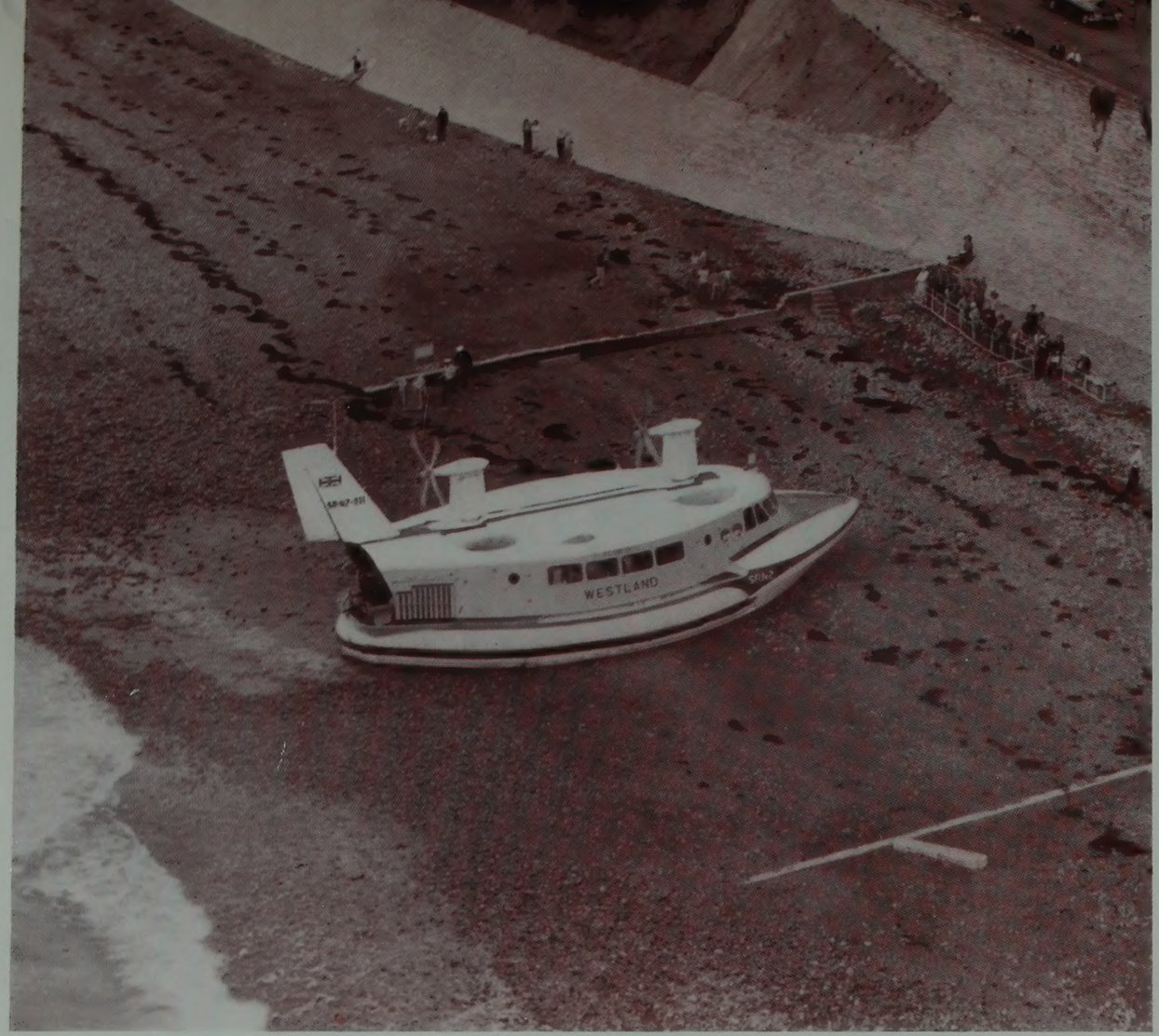
A highlight of the demonstration was SR.N2's high-speed crossings of the notorious Lachine Rapids. On the first of these, during its journey from Montreal Harbour to the Royal St. Lawrence Yacht Club, SR.N2 crossed the Rapids at well over 40 knots. So smooth was the ride that Test Driver, Harry Phillips, afterwards commented 'Rapids? We just didn't know they were there.'

History is made as SR.N2 crosses the Lachine Rapids at well over 40 knots – the first-ever high-speed transit of this centuries-old barrier to conventional ships.

SR.N2 leaves Montreal Harbour at speed on its way to the Royal St. Lawrence Yacht Club to open its demonstration programme.

Making light of scrub in places 2 ft. or more high, SR.N2 crosses an island in the St. Lawrence at speed, dramatically illustrating the hovercraft's unique amphibious capability.

The compact harbour and slipway at the Royal St. Lawrence Yacht Club highlight SR.N2's ability to operate safely in confined areas, and to dispense entirely with complex, costly docking facilities.



Preparing to leave the Penarth terminal. The picture clearly shows the very limited space required for a hovercraft terminal.

Showing the particular value of its amphibious capability in places with a large tidal rise, SR.N2 leaves the beach terminal at Weston-super-Mare. This terminal was immediately alongside the promenade and within half a mile of the town centre.

First Cross-Channel Service

In July 1963, shortly after its return from Canada, SR.N2 started a six-week experimental passenger service across the Bristol Channel, between Weston-super-Mare and Penarth – the first cross-channel hovercraft service to be operated anywhere in the world.

The aim was to gain vital operating experience which had not been provided by an earlier experimental service, operated in 1962 between the Isle of Wight and the mainland. The Bristol Channel was selected as being particularly suitable – with its tidal rise of nearly 50 ft. – for showing the value of the hovercraft's unique amphibious capability, and at the same time providing really testing conditions of wind and tide.

The considerable experience gained did much to hasten the day when travellers between the Bristol area and South Wales will enjoy a fast, smooth ride across the Bristol Channel, with a very much greater frequency of service than at present.

The great public interest aroused by the hovercraft service, is evident as yet another load of eager passengers board SR.N2 at Weston-super-Mare.

This view of SR.N2 at the Penarth terminal emphasises that literally no surface preparation was necessary on this occasion.

Dramatically illustrating the rapid rate of Westland hovercraft progress, SR.N3 dwarfs Britain's first hovercraft, the SR.N1, in the hangar at Cowes, Isle of Wight. Development from one to the other had taken less than five years.

First Large Hovercraft

The order placed by the Ministry of Aviation in March 1963 for the 37-ton Westland SR.N3, was the first received by any manufacturer for so large a hovercraft.

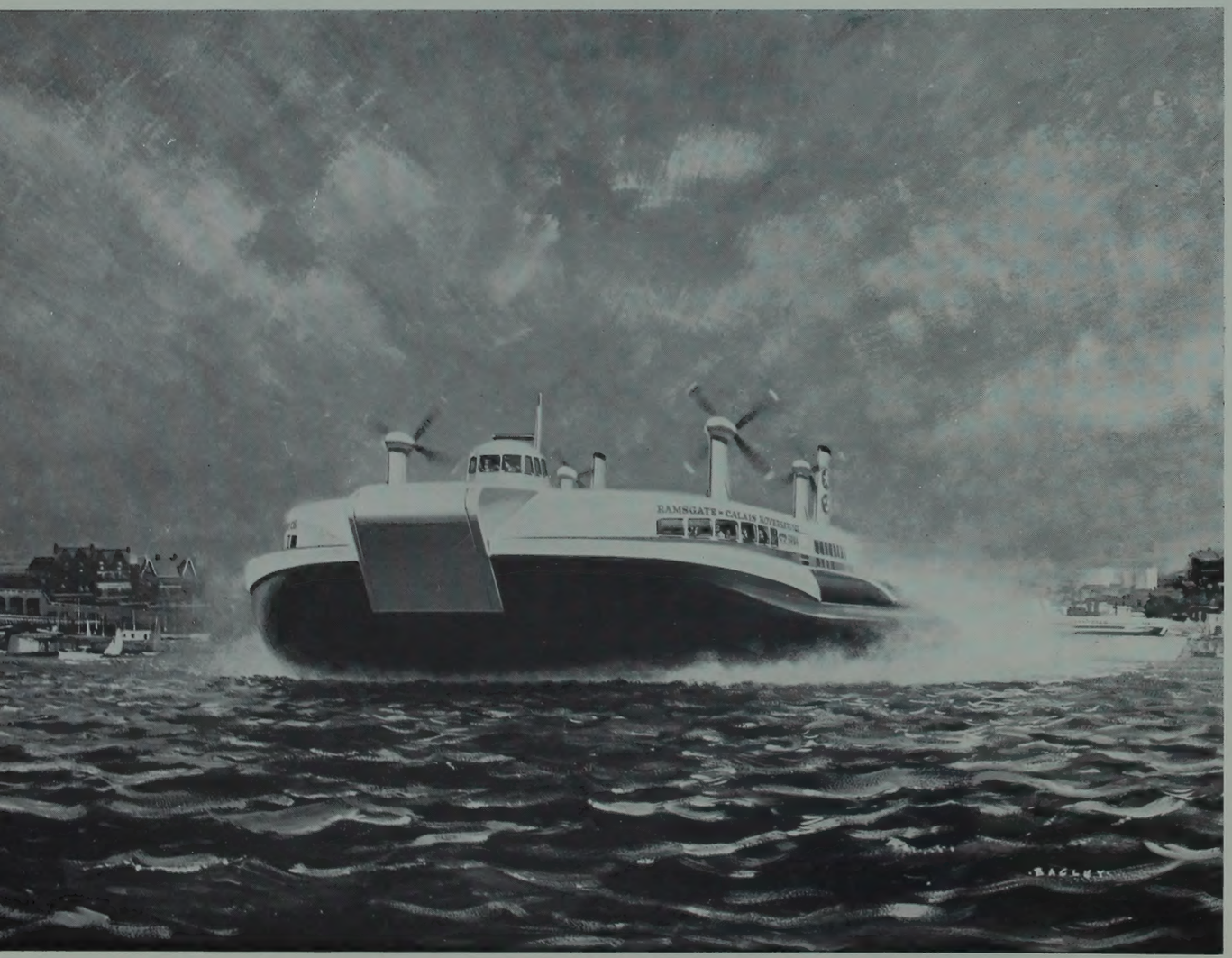
Westland's ability to provide such a craft at that early stage in hovercraft development, amply proved the soundness of the decision to build the earlier SR.N2 around major dynamic components directly applicable to larger craft. Many items, notably the transmission and control systems, were used without significant modification in the larger SR.N3.

Despite the added complexity of the bigger craft, construction was right on schedule at every stage. Throughout the manufacturer's trials programme, design expectations were fully met, and in some cases, exceeded. Within a week of being launched, SR.N3 was already operating at speeds of 50 knots and more – a sure sign of crew confidence.

On the completion of the programme in mid-1964, SR.N3 was handed over to the Interservice Hovercraft Trials Unit at Lee-on-Solent for evaluation in a number of possible overwater and amphibious military roles, along with 3 SR.N5's.

Possibly opening a new era in Naval warfare, SR.N3 puts to sea for the first time from the Westland slipway at Cowes, Isle of Wight – barely 9 months after the Ministry of Aviation order was placed.

SR.N3 travelling at over 50 knots in a choppy sea in the Solent.



First across the English Channel

Later this year, Westland SR.N6's will have the distinction of operating the first hovercraft service across the English Channel. Two Operators are planning cross-Channel services — Cross-Channel Hover Services Ltd., in which Swedish Lloyd Steamship Company and Swedish-American Line are partners, and Townsend Car Ferries Ltd.

In 1968, Cross-Channel Hover Services will inaugurate the first cross-Channel hovercraft service for passengers and cars, using the 160-ton Westland SR.N4, the first hovercraft of its type in the World. It will carry up to 250 passengers and 30 cars at a time, and do the trip in half an hour or so.

Construction of the giant SR.N4 is already well under way and trials of the first craft are scheduled to begin in the second half of 1967. In the all-passenger role, it will be able to carry 500 seated passengers, or as many as 700 on suitable "commuter" routes.

Artist's impression of a 160-ton SR.N4 passenger/car ferry picking up speed after leaving its hoverport on a cross-Channel trip.

A Westland SR.N5 of the British Interservice Hovercraft Trials Unit at speed during extended operational trials in Malaysian North Borneo. A speed of 40 knots was common on the twisting, jungle-fringed rivers.

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